

# RAMUC®

SECTION 09 96 60  
HIGH PERFORMANCE COATINGS –Ramuc EP HI Build Epoxy  
Updated May 18, 2017 - FINAL

Specification Provided To:

Date:

Job:

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

- A. Paints and coatings of the following types:
1. Commercial pool coatings.

### 1.2 RELATED SECTIONS

- A. Section 03 30 00 - Cast-in-Place Concrete.
- B. Section 04 20 00 - Unit Masonry.
- C. Fiberglass pool and slide structures

### 1.3 REFERENCES

- A. American Society for Testing Materials (ASTM):
1. ASTM B 117 - Standard Practice for Operating Salt Spray (Fog) Apparatus.
  2. ASTM D 523 - Standard Test Method for Specular Gloss.
  3. ASTM D 714 - Standard Test Method for Evaluating Degree of Blistering of Paints.
  4. ASTM D 1654 - Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
  5. ASTM D 1735 - Standard Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus.
  6. ASTM D 2370 - Standard Test Method for Tensile Properties of Organic Coatings
  7. ASTM D 2794 - Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
  8. ASTM D 2805 - Standard Test Method for Hiding Power of Paints by Reflectometry.
  9. ASTM D 3359 - Standard Test Methods for Measuring Adhesion by Tape Test.
  10. ASTM D 3363 - Standard Test Method for Film Hardness by Pencil Test.
  11. ASTM D 4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
  12. ASTM D 4587 - Standard Practice for Fluorescent UV-Condensation Exposures of Paint and Related Coatings.
  13. ASTM D 4828 - Standard Test Methods for Practical Washability of Organic Coating
  14. ASTM D 7073 - Standard Guide for Application and Evaluation of Brush and Roller Applied Paint Films.
- B. Green Seal, Inc.: GS-11 - Standard for Paints and Coatings.
- C. Ozone Transmission Commission (OTC) - Established levels of Volatile Organic Compounds.
- D. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

- E. US Green Building Council, (USGBC) - Green Seal standards for LEED paint credits.

#### 1.4 DEFINITIONS

- A. Commercial as used in this Section refers to a product well suited for a commercial application.
- B. DFT as used in this Section refers to the Dry Film Thickness of the coating.
- C. VOC as used in this Section refers to Volatile Organic Compounds found in primers, paints, sealers and stains. The level of VOCs appears after each product listed in the Schedule in grams per liter (g/L).
- D. Paints are available in a wide range of sheens or glosses, as measured by a gloss meter from a 60 degree angle from vertical, as a percentage of the amount of light that is reflected. The following terms are used to describe the gloss of our products.

Ramuc EP Hi Build Epoxy is considered a Satin finish, reading 60-70 percent on a gloss meter.

#### 1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: For each paint system indicated, including:
  - 1. Product characteristics.
  - 2. Surface preparation instructions and recommendations.
  - 3. Primer requirements and finish specification.
  - 4. Storage and handling requirements and recommendations.
  - 5. Application methods.
  - 6. Cautions for storage, handling and installation.
- C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's color samples available.
- D. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.
- E. Schedule: Provide a paint schedule indicating each type of surface to be painted, and primer and finish coats proposed for use; include dry film thickness for each coating.

#### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Paint exposed surfaces. If a color of finish or a surface is not specifically mentioned, Architect will select from standard colors and finishes available.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
  - 1. Finish surfaces for verification of products, colors and sheens.
  - 2. Finish area designated by Architect.
  - 3. Provide samples that designate primer and finish coats.
  - 4. Do not proceed with remaining work until the Architect approves the mock-up.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information:
  - 1. Product name and type (description).
  - 2. Application and use instructions.
  - 3. Surface preparation.
  - 4. VOC content.
  - 5. Environmental issues.
  - 6. Batch date.
  - 7. Color number.
- B. Storage: Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.
- D. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

## 1.8 PROJECT CONDITIONS

- A. Maintain or anticipate environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

## 1.9 EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.
- B. Furnish Owner with an additional one percent of each material and color, but not less than 1 kit or 1 case, as appropriate.

## 1.10 WARRANTY

- A. Ramuc does not make nor does it authorize anyone to make any warranty of merchantability or fitness for any purpose or any other warranty, guarantee or presentation, expressed or implied, concerning this material except that it conforms to product specifications distributed by the company. In any event, liability is limited to the replacement of product, or its value, if proven to be defective in manufacturing.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Ramuc Pool Paint®, which is located at: 36 Pine Street; Rockaway, NJ 07866; Toll Free Tel: 800-745-6756; Fax: 800-445-9963; Email:[request info \(info@ramucpoolpaint.com\)](mailto:info@ramucpoolpaint.com); Web:[www.ramucpoolpaint.com](http://www.ramucpoolpaint.com)
- B. No substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

### 2.2 COMMERCIAL POOL COATINGS

- A. Ramuc Pool Epoxy Mastic:
  - 1. Product: Epoxy Mastic. Durable, high-performance epoxy coatings offering excellent solvent, chemical and abrasion resistance.

2. Apply to properly prepared surface.
3. 1:1 mixing ratio of base and activator.
4. Apply two coats @ 5-8 mils DFT. per coat.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Engineer, Architect, and Applicator to review the product manufacturer's special instructions for surface preparation, application, temperature, re-coat times, and product limitations. Review product health and safety precautions listed by the manufacturer. Be responsible for enforcing on site health and safety requirements associated with the Work.
- B. Do not begin installation until substrates have been properly prepared.
- C. Ensure that surfaces to receive paint are dry immediately prior to application.
- D. Ensure that moisture-retaining substrates to receive paint have moisture content within tolerances allowed by coating manufacturer. Where exceeding the following values, promptly notify Architect and obtain direction before beginning work.
  1. Concrete and Masonry: 13 percent. Allow new concrete to cure a minimum of 28 days.
  2. Plaster: 15 percent.
  3. Concrete Slab-On-Grade: Perform calcium chloride test over 24 hour period or other acceptable test to manufacturer. Verify acceptable moisture content and pH levels.
- E. Examine surfaces to receive coatings for surface imperfections and contaminants that could impair performance or appearance of coatings, including but not limited to, loose primer, rust, scale, oil, grease, mildew, algae, or fungus, stains or marks, cracks, indentations, or abrasions.
- F. Correct conditions that could impair performance or appearance of coatings in accordance with specified surface preparation procedures before proceeding with coating application.

### 3.2 SURFACE PREPARATION

- A. General: Surfaces shall be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint or other contamination to ensure good adhesion.
  1. Abrade/sand existing epoxy or fiberglass surfaces to achieve a #80 grit profile.
  2. Scrub the entire surface with Ramuc Clean and Prep Solution to remove all grease, dirt, oils AND to etch bare areas to achieve a medium grade sandpaper finish. Flush/rinse with clean water.

OR
  3. Scrub the surface with a TSP solution using one cup of TSP to 4 gallons of water. Extra attention given to cleaning the water line area of a pool or spa is essential. TSP should remove fats, oils, and algae from the pool or spa surface.
  4. Next apply a 15-20% solution of muriatic or sulfamic acid. NEVER ADD WATER TO ACID, ALWAYS ADD ACID TO WATER. The acid solution should etch the concrete/plaster surface and remove mineral build-up. Be sure to wear protective goggles, gloves, and suitable clothing.
  5. Follow the acid wash immediately with a TSP rinse to re-neutralize the surface.
  6. Allow the surface to dry. The average number of days varies regionally and depends upon the porosity of the surface. It is recommended to wait five dry days and then perform a condensation test to determine surface dryness.
    - a. Condensation test is performed by duct taping several pieces of plastic on the pool surface. Locate the plastic pieces in the deep end, shallow end, and on the walls of the pool. Wait **four to five** hours to determine if condensation has

formed underneath the plastic. If condensation has formed on the plastic, remove the plastic and wait 24 hours to perform the test again. Continue with the test until no condensation forms underneath the plastic. This ensures the surface is dry enough to apply epoxy paint.

7. Do not paint when rain is imminent

### 3.3 INSTALLATION

- A. Apply each coat to uniform coating thickness in accordance with manufacturer's instructions, not exceeding manufacturer's specified maximum spread rate for indicated surface; thins, brush marks, roller marks, orange-peel, or other application imperfections are not permitted.
- B. Allow manufacturer's specified drying time, and ensure correct coating adhesion, for each coat before applying next coat.
- C. Inspect each coat before applying next coat; touch-up surface imperfections with coating material, feathering, and sanding if required; touch-up areas to achieve flat, uniform surface without surface defects visible from 5 feet (1.5 m).
- D. Remove dust and other foreign materials from substrate immediately prior to applying each coat.
- E. Where paint application abuts other materials or other coating color, terminate coating with a clean sharp termination line without coating overlap.
- F. Re-prepare and re-coat unsatisfactory finishes; refinish entire area to corners or other natural terminations.

### 3.4 APPLICATION

- A. Type EP Hi Build Epoxy is self-priming; no other type of primer is recommended or should be used.
- B. Mixing the product.
  1. Mechanically mix Part A for approximately 10 minutes.
  2. Mechanically mix Part B for approximately 10 minutes.
  3. Mechanically mix both Part A and Part B together for approximately 15 minutes.
- C. Allow the admixed paint to set for 15-30 minutes (induction time) prior to use at 70° F. and 50% relative humidity. At 65° the induction time is 45 minutes. Do not use this product at air temperatures below 50°.
- D. Pot Life of admixed paint is 3 hours at 70 degrees.
- E. If mixing more than the one - 2 gallon kit at a time be sure to intermix the kits to ensure color uniformity.
- F. Apply two (2) coats at 7-12 wet mils per coat. Check with a wet film gauge to ensure that the minimum wet film thickness of each coat is obtained. Theoretical coverage on a smooth surface will be 150-200 square feet per kit and 300-350 square feet per kit on recoats. Actual coverage will vary and is dependent upon the texture and profile of the surface. Dry film thickness of the completed project is to be 10-16 mils. Recoats can be applied between 16-72 hours of the first coat. If the second coat is applied beyond 72 hours of the first coat, the surface will require abrading.
- G. EPOXY CURE RATES
  1. After the second coat of epoxy is applied, allow the paint to cure.
  2. Outdoor cure rates are 5-7 dry days.

3. Indoor cure rates are 10-14 dry days.
4. If rain occurs during any part of the paint process, allow an extra day of cure time for each day of rain.
5. Do not cover the pool during cure time unless it rains. Covering the pool will impede proper curing.

### 3.5 GENERAL GUIDELINES

- A. Ideal temperatures for application are when surface temperatures are between 50°F - 90°F.
- B. Do not apply Type EP Hi Build when rain is expected within 72 hours.
- C. Overnight curing temperatures must be at least 50° F, or paint will not cure properly.
- D. An application guide is available and can be considered a part of this specification. For questions not addressed in this specification or literature, please contact the manufacturer at 1-800-745-6756.

### 3.6 CLEANING

- A. Clean excess coating materials, and coating materials deposited on surfaces not indicated to receive coatings, as construction activities of this section progress; do not allow to dry.
- B. Re-install hardware, electrical equipment plates, and mechanical grilles, lighting fixture trim, and other items that have been removed to protect from contact with coatings.

Reconnect equipment adjacent to surfaces indicated to receive coatings. Relocate to original position equipment and fixtures that have been moved to allow application of coatings.

- C. Remove protective materials.

### 3.7 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION